

WE CLAIM:

1. A method of performing layer 2 frame delineation comprising:

      prior to transmitting layer 1 frames, adding layer 2

5 boundary information to each layer 1 frame, the layer 2 boundary information indicating whether there is a layer 2 header within the layer 1 frame and indicating where in the layer 1 frame the layer 2 header begins.

2. A method according to claim 1 wherein the layer 2

10 boundary information comprises frame delineation bits added to each layer 1 frame.

3. A method according to claim 2 wherein the frame delineation bits added to a particular layer 1 frame comprise at least one bit indicating whether the particular frame 15 contains a layer 2 header, and at least one bit indicating where the layer 2 header begins.

4. A method according to claim 1 further comprising:

      aligning a start of each layer 2 frame with one of a plurality of predetermined layer 2 start positions within layer 20 1 frames;

      wherein indicating where in the layer 1 frame the layer 2 header begins comprises indicating a respective one of the plurality of predetermined layer 2 start positions.

5. A method according to claim 4 wherein there are  $2^n$  25 predetermined layer 2 start positions, and wherein the frame delineation bits comprise n bits for indicating one of these predetermined start positions.

6. A method according to claim 1 wherein the layer 1 frames are OFDM (orthogonal frequency division multiplexing) symbols.

7. A method according to claim 6 wherein the boundary 5 information is transmitted on dedicated OFDM sub-carriers.

8. A method according to claim 1 wherein the boundary information is transmitted on a dedicated channel.

9. A method according to claim 1 wherein the boundary information is transmitted in punctured symbol locations within 10 the layer 1 frame.

10. A method according to claim 6 wherein the boundary information is transmitted in punctured symbol locations within the layer 1 frame.

11. A transmitter comprising:

15 layer 1 functionality adapted to, prior to transmitting layer 1 frames, add layer 2 boundary information indicating whether there is a layer 2 header within the layer 1 frame, and to indicate where in the layer 1 frame the layer 2 header begins.

20 12. A transmitter according to claim 11 wherein the layer 2 boundary information comprises frame delineation bits added to each layer 1 frame.

13. A transmitter according to claim 12 wherein the frame delineation bits added to a particular layer 1 frame comprise 25 at least one bit indicating whether the particular frame contains a layer 2 header, and at least one bit indicating where the layer 2 header begins.

14. A transmitter according to claim 11 further comprising:

layer 2 functionality adapted to align a header of each layer 2 frame with one of a plurality of predetermined  
5 layer 2 start positions within layer 1 frames;

wherein indicating where in the layer 1 frame the layer 2 header begins comprises indicating a respective one of the plurality of predetermined layer 2 start positions.

15. A transmitter according to claim 11 wherein the layer  
10 1 frames are OFDM (orthogonal frequency division multiplexing) symbols.

16. A method of performing layer 2 frame delineation comprising:

15 for each layer 1 frame of a sequence of layer 1 frames:

receiving the layer 1 frame;

20 extracting boundary information from the layer 1 frame indicating whether there is a layer 2 header within the layer 1 frame, and indicating where in the layer 1 frame the layer 2 header begins.

17. A method according to claim 16 further comprising:

for each layer 1 frame determining if the layer 1 frame is received in error;

25 wherein after receiving a layer 1 frame in error, layer 1 frames are not passed up to layer 2 until a layer 1 frame is received without error with boundary information

indicating a layer 2 header is located within the layer 1 frame.

18. A method according to claim 17 further comprising:

looking for a layer 2 header in a location identified  
5 by the boundary information.

19. A method according to claim 18 further comprising  
passing the boundary information up to layer 2.

20. A method according to claim 16 wherein the layer 2  
boundary information comprises frame delineation bits added to  
10 each layer 1 frame.

21. A method according to claim 20 wherein the frame  
delineation bits added to a particular layer 1 frame comprise  
at least one bit indicating whether the particular frame  
contains a layer 2 header, and at least one bit indicating  
15 where the layer 2 frame begins.

22. A method according to claim 16 further comprising:

looking for a layer 2 header aligned with one of a  
plurality of predetermined layer 2 start positions within layer  
1 frames;

20 wherein the boundary information indicates where in  
the layer 1 frame the layer 2 header begins by indicating a  
respective one of the plurality of predetermined layer 2 start  
positions.

23. A method according to claim 16 wherein the layer 1  
25 frames are OFDM (orthogonal frequency division multiplexing)  
symbols.

24. A receiver comprising:

layer 1 error detection function adapted to determine if a received layer 1 frame is in error, and if so to discard the received layer 1 frame;

5 boundary information processing function adapted to extract from each layer 1 frame boundary information indicating whether there is a layer 2 header located within the layer 1 frame and where the layer 2 header is located;

wherein after receiving a layer 1 frame in error,  
10 layer 1 frames are not passed up to layer 2 until a layer 1 frame is received without error which contains boundary information indicating a layer 2 header is located within the layer 1 frame.

25. A receiver according to claim 24 further comprising:

15 layer 2 functionality adapted to look for a layer 2 header in a location identified by the boundary information.

26. A receiver according to claim 25 wherein the layer 2 boundary information comprises frame delineation bits added to each layer 1 frame.

20 27. A receiver according to claim 26 wherein the frame delineation bits added to a particular layer 1 frame comprise at least one bit indicating whether the particular frame contains a layer 2 header, and at least one bit indicating where the layer 2 frame begins.

28. A receiver according to claim 24 further comprising:

layer 2 functionality adapted to look for a layer 2 header aligned with one of a plurality of predetermined layer 2 start positions within layer 1 frames;

5 wherein the boundary information indicates where in the layer 1 frame the layer 2 header begins by indicating a respective one of the plurality of predetermined layer 2 start positions.

29. A receiver according to claim 24 wherein the layer 1  
10 frames are OFDM (orthogonal frequency division multiplexing) symbols.

30. A computer usable medium containing instructions for causing processing hardware to execute the method of claim 1.

31. A computer usable medium containing instructions for  
15 causing processing hardware to execute the method of claim 16.

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